THE VETERINARY RECORD

A Weekly Journal for the Profession.

EDITED BY WILLIAM HUNTING, F.R.C.V.S.

No. 1312. AUGUST 30, 1913. VOL. XXVI.

THE STATE CONTROL OF TUBERCULIN.

There is an increasing desire in our profession that tuberculin should be placed under State control in two particulars. One is that it should be standarised, so as to be of uniform activity; the other is that its use should be limited to veterinary surgeons. Both are so obviously desirable that we seem in some danger of losing sight of the question of whether either is possible; for veterinary societies pass resolutions supporting them almost as matter of course, with little discussion of their practicability.

Undoubtedly the standardisation of tuberculin would be a good thing, if it could be accomplished. Many private firms and some institutes manufacture tuberculin; and it is well known that the products of different makers are not all of equal potency. But by what legal provisions could the standardisation be accomplished? And could it be accomplished at all without conferring something approaching to monopolies upon a few manufacturers? Without discussing the latter plan, it may be said at once that no British Government would be at all likely to adopt it. This question of interference with vested interests is a serious one; and it is not the only difficulty in the way of the standardisation of a biological product such as tuberculin.

The proposed limitation of the use of tuberculin to veterinary surgeons might be more easy to attain, so far as the mere legislation for it is concerned. But is it likely that any such legislation could be enforced? Of course it would be illegal for laymen to buy tuberculin from abroad and use it; but they could, and would, do so undetected perhaps to a considerable extent. Further, while such legislation would not stop the lay use of tuberculin, it would have the effect of rendering it an absolutely secret practice, which it scarcely is at present—and possibly also tend to systematise it. Ill-considered legislation is apt to defeat its own object; and its seems possible that such legislation as this might even increase rather than diminish the fraudulent use of tuberculin.

A tuberculin of uniform strength in use throughout the kingdom, and available only to veterinary surgeons, would enable us to work under ideal conditions. That may be granted without question; but is it likely that such conditions can ever be obtained? Before making a serious attempt to obtain them, we should do well to carefully consider the practical difficulties that may check us.

SPASM OF THE LARYNX?

I have encountered two cases of this condition, both calling for the prompt operation of tracheotomy. Both occurred under the same conditions of work and weather—work in the hayfield on very hot days. Both appeared to be cases of pure, uncomplicated spasm, as after obtaining relief by tracheotomy the animals were in a short time able to breathe comfortably through the larynx when the hole in the trachea was temporarily closed.

Case I. Subject.—A light cart mare, had been drawing a hay rake.

July 15th, 1907.—This animal was reported to be breathing with difficulty and making a loud noise. I found her obviously distressed, and making a considerable noise during inspiration; membranes very cyanosed. As there seemed no likelihood of a foreign body being present in the pharynx or larynx I diagnosed spasm of the latter, and tried injections of morphia, with liniment externally; getting no relief, and the membranes becoming more cyanosed and mare more distressed, I fetched a tracheotomy tube, etc., as quickly as possible. Returning in a few minutes I found the mare off her legs, so dispensing with any antiseptic preparations I hastily opened the trachea and inserted the tube. In a few minutes the breathing was normal, the membranes a more natural colour, and the mare able to rise. I found on closing the tube the mare was again able to breathe comfortably through the larynx.

Case II. Subject.—A powerful cart horse, nine years old, had been helping to draw a mowing machine.

August 2nd, 1913.—I received a telegram "Come at once, accident in hayfield," consequently I went prepared for wounds, etc., but not "tracheotomy."

I found this animal very distressed, breathing with great difficulty, membranes very cyanosed, but noise was not so noticeable as in first case. Tracheotomy was urgently necessary, and I made hasty preparation.

On lifting the horse's head slightly, to expose the trachea, he fell down, and the operation had to be performed in the recumbent position. Unluckily the animal fell on a heap of dust, and I had visions of septic trouble, but the breathing had practically stopped, and there was no time to move him.

After holding the trachea open with my fingers for a few minutes the horse was able to rise, and I improvised a tube from a piece of lead tubing.

As in the first case, I found the obstruction to the breathing had passed away after a few minutes, and so far as I know there was no recurrence in

either case, although I kept the temporary tubes in for a day or two as a safeguard.

I had the mare under observation for three years afterwards, but she had no return of the trouble, continued to work normally, and I could not detect any obstruction to her breathing, the horse on the other hand, I was given to understand, had been a roarer for some time.

As in neither case was there any coughing to clear the larynx, etc., I conclude these were cases of spasm pure and simple.

HERBERT E. WHITEMORE.

Langport, Somerset.

TETANUS.

About two months ago a seven-year-old Shire mare was sent to be shod and returned with a wound on the right side of the loin. A fortnight later I was asked to see her as they thought she had hurt her back. I found her with nose poked out, ears pricked, tail erected, haw crossing over the eye when head was raised, her hind legs were straddled wide apart, jaws not quite closed. Having some anti-tetanic serum by me, I injected a full dose at the seat of injury. We kept her in slings for five weeks, during which time she stood with hind legs as far apart as ever she could get them. The muscles were very rigid, and she could not move them forward or backward. Her jaws never completely closed, and she fed well all the time. Eventually the rigidity left her tail, she gradually regained the normal use of her legs, and she is now at work in the team.

CHLOROFORM STANDING.

I treated three horses by this method ; the first, a heavy Shire stallion, which they could not shoe standing. He took three ounces and went down quietly. He was never any trouble to shoe after this.

Second. A Shire gelding ; operation, poll-evil and fistulous withers. He was no trouble.

Third. Last Thursday morning a seven-year-old hunter was sent to be unnerved in the off fore leg for navicular disease. We put two ropes round his neck with two men on each side to steady him.

I put chloroform into the muzzle (air excluded). The place in which we were going to operate was a combination of an orchard and garden. As soon as he got a smell of the chloroform he started off full gallop, and we could not hold him ; he went full tilt over some young apple trees, through a row of sweet peas and a tomato bed, knocked one of the men down and broke his finger. I managed to get my rope round a plum tree, and he kept on full tilt round the tree until he wound himself up, taking all the skin off my knuckles. We had put the instruments behind this tree ; he galloped over the tray two or three times scattering the instruments, etc., and breaking the chloroform bottle. When he finished up he was about half chloroformed, and as I had no more handy he came to again. We cast him with the hobbles and chloroformed him down. After the operation he ate a mouthful or two of hay, then began to blow and retch, bringing up mucus through his nostrils ; he kept this on for about an hour and then recovered.

He left for home yesterday, sound and all right. When I want to chloroform another horse I think I will put him down first.

J. H. PARKER, M.R.C.V.S.

Faringdon.

CANINE DISTEMPER.

With reference to a paragraph from *The British Medical Journal* which appeared in *The Record* of June 21st anent the causal organism of canine distemper, I thought it might be of some interest to mention that the Director of the Pasteur Institute at Kasauli—Capt. Acton, I.M.S., has informed me recently, that some three years he noted amongst his experimental rabbits, whose numbers vary between 500 and 1000, a fatal epidemic occurring annually or bi-annually, generally at the end of the rainy season or commencement of the hot weather. The condition he believed was identical with canine distemper, the symptoms and course of the disease being in every respect similar.

Proceeding to investigate, he isolated from the trachea of rabbits dead of the condition a coccobacillus, and this he had no difficulty in growing at 35° C. on agar.

Injection of this material into young healthy dogs and kittens set up a condition in them similar to canine distemper and to the epidemic amongst the rabbits. Adult dogs and cats were refractory.

Proceeding further, Captain Acton prepared a vaccine from the material, and it is now the custom at the Institute on the approach of the infective seasons to vaccinate young or any rabbits that it is intended to carry over for some months—or at least those that will not be required for immediate experimental work. The results have been excellent, the disease having, I understand, practically disappeared from the hutches.

In conclusion, I may note that this seems to confirm the contention of McGowan, Ferry, and others.

L. J. KELLY, M.R.C.V.S.

Calcutta.

ABSTRACTS FROM FOREIGN JOURNALS

THE PATHOGENICITY OF THEILER'S TRYPANOSOME.

Vryburg has published (*Tydcshr. v. Veeartsenijkunde*) an article upon this question. It is very probable. he says, that the trypanosomes discovered in healthy cattle in different countries belong to the same species. Laveran makes a distinction between the trypanosome of Theiler and the Transvaalian

trypanosome; but Vryburg is convinced that they are only two varieties of the type *T. Theileri*.

It is generally admitted that this parasite is not pathogenic; for the cattle in which it has been found (either by direct examination of the blood or by cultures) present very few morbid symptoms, or show symptoms which may be attributed to other causes. Theiler, having found the parasite in cattle affected with biliary fever, assigned a pathogenic *rôle* to it; but, at a later period, he considered the trypanosome to be an occasional parasite, and and recognised that the disease of biliary fever is due to a parasite of the red blood corpuscles, which he named *Anaplasma marginale*.

Theiler also found the trypanosome in cattle affected with rinderpest.

A great number of workers have experimented with Theiler's trypanosome; and Vryburg concludes from their results, that if the parasite does not generally produce morbid lesions, we nevertheless cannot be assured that it is totally inoffensive.

When the parasites are so few that direct examination of the blood fails to reveal their presence, they cause little disturbance. When they are more numerous, they induce fever and engorgement of the spleen and lymphatic glands. If the temperature is not taken, the affected animals may only show slight objective symptoms; but it is none the less true that, in subjects attacked by another disease, chronic trypanosomiasis may become acute and engender serious and even mortal disturbances. Vryburg therefore thinks that Theiler's trypanosome, which is found in at least 27 per cent. of Dutch cattle over two years old, should not be considered as a negligeable quantity.—(*Annales de Méd. Vét.*

Trypanosomes found in a Cow in England.

A. C. Coles (*Parasitology*, 1913, Jan., vol. 5, No. 4, pp. 247—252) after summarising the literature that has appeared on the occurrence of trypanosomes of the *theileri* type in the blood of cattle, describes two specimens found by him in the blood of a cow in Dorsetshire.

At the time when the trypanosomes were found, the animal was the subject of redwater, *Babesia bovis* being present in the blood and about 2 per cent. of the blood corpuscles invaded. Two parasites were found in one blood film out of seven examined, and none were found in 20 films made two days later.

The trypanosome measured 98 microns in length including the flagellum. The body measured 88; the flagellum 10; from the posterior extremity to the kinetonucleus 37, and to the centre of the trophonucleus 44; the diameter of the body 6; and the width of the undulating membrane 3·5 microns. —(*Tropical Veterinary Bulletin*).

Epizootic Myocarditis of the Sheep.

J. Lesage, in a communication to the Academy of Sciences, describes a disease which he designates by the above name. It is a malady of infectious character, which raged at the commencement of this year amongst several flocks of sheep (South-down crosses) in the Cote-d'Or district, causing a great mortality.

In one of the flocks the disease appeared at the end of January, and in less than three months destroyed sixty of that year's lambs (the total number of lambs in the flock being 130). The ewes suckling the affected lambs did not contract the disease. On the other hand, the ram which was the sire of these lambs was affected, and may be regarded as the cause of the disease in the lambs. The ram was six years old, and had been introduced into the flock the year before. He had always been in bad general condition, and had been subject to recurrent attacks of vesicular eruption of the lips, œdema of the subglonal region, lachrymation, and evident signs of debility. He was slaughtered during the course of the epizootic, and showed the same post-mortem lesions as the lambs.

Two very apparent symptoms observed in the course of the disease in lambs are an ulcero-membraneous stomatitis and disturbances of locomotion. Both these signs may be absent; but there is one post-mortem lesion which is absolutely constant, viz., a degenerative inflammation of the cardiac muscle. The constancy of this lesion justifies the designation of the disease which the author employs, until the etiological role of the protozoa he has observed is definitely settled.

The ulcerous stomatitis, which generally precedes the troubles of locomotion, resembles in its symptomology the affection which is commonly called *brouton* or *muguet* of lambs, the causal microbe of which has not yet been discovered. It is an ulcerative inflammation of the buccal mucous membrane, with the production of a pultaceous whitish deposit. The initial lesions are small perfectly round vesicles of from 1-12th inch to 1-8th inch in diameter, and may be either isolated or confluent.

The disturbances of locomotion consist in a kind of paralysis, which obliges the animals to lie down after walking a few steps, and renders it impossible for them to rise unaided. The lambs, thus confined to the ground, show no acute suffering; they bleat to call their mothers, and, if helped to their feet, take the teat and feed with appetite. They all show constipation.

In rapidly progressing cases, death occurs in two or three days; in others, only at the end of a month or two, the course of the disease in these latter cases being marked by relapses. These are cases in which death occurs suddenly, in animals which have been believed to be completely cured.

Post-mortem, the liver is hypertrophied and discoloured in many cases. The spleen and the other organs, except the heart, have a normal appearance.

The alteration of the heart involves neither the pericardium nor the pericardial fluid; but the myocardium is invariably the seat of important lesions of degeneration. The external aspect of the cardiac muscle presents a spotted appearance, particularly at the point of the organ and in the neighbourhood of the coronary arteries. The spots are yellowish in colour, and contrast with blackish

hæmorrhagic zones; they are either punctiform or extensive, and are distributed irregularly over a surface of a few centimeters. Upon section of the wall of the heart, the naked eye can see that these spots represent yellowish islets involving a quarter or even a third of the thickness of the wall. The point of the heart is often very thin, and reddened internally.

Internally, the auriculo-ventricular and sigmoid valves are very œdematous and bright red in colour. The spots of degeneration are more numerous and more extensive; and at these spots the endocardium is destroyed.

Microscopic examination of sections of the myocardium under a high power shows that the degenerating cardiac fibre becomes hypertrophied and then loses its transverse stiation, while at the same time most of its nuclei become segmented by direct division. These nuclei, simple or divided, then become surrounded at the expense of the fibre by a transparent substance which is the product of the degeneration. The process is therefore really one of absorption rather than of inflammation.

Cultural experiments have been made upon the usual media with blood (even in large quantities), with liver-pulp and spleen-pulp, and also with the degenerative substance of the heart. All these have yielded negative results.

On the other hand, microscopical examination of scrapings from the buccal lesions and the hepatic parenchyma has revealed the presence of two interesting protozoa. The first is a spirochæte, which is found in the lesions of ulcero-membraneous stomatitis in all the affected animals; the second is a flagellated organism which exists in the hypertrophied liver. Without prejudging the relations which may be established between the two organisms, and without yet being able to affirm that they are veritable agents of the disease, the author describes them as follows;—

The *spirochæte* appears in the form of long undulating filaments, very thin, tapered at the extremities, and forming a spiral, the length of which varies from 12 to 30 microns, with a thickness of from 0.1 to 0.4 micron. The ordinary nnmber of curves of the spiral is from three to four for the most common forms (those about 15 microns long); but it is from 8 to 10 for longer forms which are undergoing division. The organism takes stains with difficulty, and remains very pale in preparations made by Giemsa's method.

The *flagellate* organism of the hypertrophied liver should be compared with the parasite described by Rivolta in 1881 under the name of *monocercomonas hepatica*, and discovered in the livers of young pigeons. It stains easily by Giemsa's method.

It is destitute of an undulating membrane. Some of its forms are fusiform, and provided with two flagellæ situated at the two extremities of the protoplasmic body. Others are round in shape, and are without prolongations. The *fusiform* organisms have a length of from 2 to 4 microns without the flagellæ, each of which is from 3 to 4 microns long. The protoplasm of these forms is granular, and the nucleus is diffuse. The *round* forms have nearly the dimensions of red blood corpuscles; their nuclei are better defined than those of the fusiform organism, and form variable figures.

These round forms are often seen in masses comparable to those which have been described in connection with the trypanosome of the rat under the name of *pseudo-leucocytes*.—(*La Semaine Vétérinaire*).

W. R. C.

A Study of the Normal Blood of the Carabao (Buffalo).—W. H. Boynton. (*Philippine Bur. Agr. Bul.* 21, 1912, pp. 12).

Twenty-five animals in normal condition, from 2½ to 6 years of age, were used in the studies here reported.

In the circulating blood of supposedly normal carabaos over two years old the red corpuscles were found to average 6,057,520 per millimeter. The average percentage of hemoglobin was 92·6. The average number of leucocytes was 10·389 per cubic millimeter. The average specific gravity found was 1·0532. The relative volume of corpuscles to plasma was found to be 29·1 per cent. of corpuscles to 70·9 per cent. of plasma.

The average time for complete coagulation of the blood was found to be three minutes and 16 seconds plus.

Of the five varieties of leucocytes found in the peripheral blood, 48·5 per cent. were lymphocytes, 4·6 per cent. large mononuclears, 34·5 per cent. polynuclears, 11·5 per cent. eosinophiles, and 12 per cent. mast cells.

The Infectivity of Parts of Organs of Glandered Horses, The Complement Fixation Reaction with Guinea-pigs, and some Curative and Immunizing Tests.—H. Miessner (*Centbl. Bakt. etc. 1, Abt., Orig.*, 64, (1912), *Festschrift f. Loeffler*, pp. 121-151, pl. 1).

Only one quarter of the guinea-pigs infected with pieces of the organs of glandered horses became glandered. According to this, the results obtained with the infection test must be interpreted with care. Guinea-pigs infected with defibrinated blood rarely took the disease. Guinea-pigs infected with either the organs or blood of glandered animals can only be considered glandered when the findings of the complement fixation test have been confirmed by the autopsy findings, or the animals have gone through the course of a light form of the disease during their lifetime. Therefore the complement fixation tests cannot be relied upon.

Guinea-pigs were treated with mallein or a killed culture of glanders bacillus for the purpose of determining whether the serum of these animals behaves as does that obtained from horses pretreated in the same way. This was answered in the affirmative with the aid of the complement fixation test. Artificial and natural gastric juice did not seem to have any particular bactericidal action for the glanders bacillus. Glanders bacilli placed directly in the stomach of guinea-pigs produce glanders in these animals. Horses which were fed cultures of

bacillus mallei, given with the food, did not contract the disease.

Immunizing tests with antiformin solutions of the glanders bacillus and guinea-pigs showed that a single or a double treatment (given subcutaneously or intra-abdominally) did not produce an immunity in these animals. The salvarsan treatment was not effective for glanders.

MORTALITY OF STOCK ON MANGELS.—C. ASTON *Jour. New Zeal. Dept. Agr.*, 3 (1912), No. 3, pp. 214-215; *Vet. Jour.*, 68 (1912), No. 445, pp. 425-427.

The author reports briefly on investigations conducted following the loss in August of cattle and pigs which had been fed on mangels. Analyses of these mangels made during September showed the juice to contain 0·06 per cent. of nitrogen as nitrites and nitrates. Nitrites were present in traces, a fact which seems not to have been recorded before in mangels, although mentioned as being found in other plant juices in small amounts. "The amount of nitrogen found is equivalent to 0·43 per cent. of potassium nitrate, and a cow eating 60lbs. of mangel juice would consume 116 gm. (4 oz.) potassium nitrate (mangels contain 95 per cent. of juice)."

F. E. P.

FILTER PASSERS.

At the Seventeenth International Congress of Medicine, in Section IV., Bacteriology and Immunity, under the presidency of Prof. G. Sims Woodhead, on Monday, Aug. 11th :—

Prof. F. LOEFFLER (Greifswald) opened a discussion. He said that since he and Frosch showed in 1898 that the virus of foot-and-mouth disease passed through filters a large series of diseases had been attributed to "filter passers." Amongst these might be mentioned yellow fever, dengue, pappataci fever, poliomyelitis, and infective pleuro-pneumonia of cattle; recently it had been asserted that the infective agents of scarlet fever, measles, and typhus fever also belonged to this group. He pointed out that the capacity of a virus to pass through a filter told nothing of its nature except that it must be of minute size. The virus could be characterised only by its power to reproduce the disease on inoculation. Attempts to cultivate the filter passers in artificial media had in general been unsatisfactory; but success had been achieved in certain instances. Thus, the virus of infective pleuro-pneumonia was cultivated inside collodion sacs in the peritoneal cavity of rabbits, and Bordet obtained growths on blood agar. The parasite in this instance was relatively large and its filtrability was prevented if there was too great an amount of albumin in the fluid to be filtered. The fowl plague virus also grew in artificial media, as was proved by the fact that the minimal infecting dose was the same after repeated subculture as in the original culture (Marchoux, Landsteiner, and Berliner); this parasite required intact blood corpuscles for its growth.

But in other instances, *e.g.*, foot-and-mouth disease, attempts at cultivation had failed. Immune sera could be obtained by inoculation with large amounts of cell-free infective material—*e.g.*, cow-pox lymph. In conclusion, Prof. Loeffler urged that in view of the great importance of filter passers in the etiology of disease, laboratories should be devoted to the study in all countries.

Sir JOHN M'FADYEAN (London) said that the demonstration of invisible viruses marked a new epoch. The invisibility of a virus was of more interest than the fact that it was a filter passer. The term "filter passer" was not a precise one. Whether bacteria could pass through a filter or not depended on (*a*) the texture and thickness of the filter wall; (*b*) the pressure under which the filtration was carried out; (*c*) the duration of the filtration; (*d*) the composition of the liquid in which the bacteria were suspended; and (*e*) the form and dimensions of the bacteria. By way of control it was necessary to show that a small but visible organism in the fluid was held back by the filter while the virus passed through. In the case of human diseases it might be difficult to prove the presence of the virus unless a susceptible animal could be found. In regard to the reproduction of the natural disease by inoculation there were pitfalls. Thus, in the case of swine fever cultures of a bacillus, which was at one time thought to be the cause of the disease, produced the characteristic lesions on inoculation, but the experimental disease was not contagious. On the other hand, the inoculation of the filtered virus of infective pleuro-pneumonia practically never gave rise to the lung lesions characteristic of the natural disease, and the experimental disease was non-contagious; but the same held good of inoculation with the unfiltered infective material. It was a striking fact that the great majority of the filter passers had not been obtained in artificial culture. This might be due in some cases to their being of protozoal nature—*e.g.*, the viruses which were transmitted by insects, such as yellow fever. Again, the occurrence in certain instances of infection by the mouth pointed to the bacterial nature of the parasite. The occurrence of saprophytic invisible filter passers had not yet been demonstrated, but this might be due to ignorance of the conditions necessary for growth. It was probable that great advances would be made in the cultivation of invisible organisms, and he agreed with Prof. Loeffler that the study of this group should be subsidised.

Dr. W. FORNET (Berlin) reported that he had effected the pure culture of the vaccinia virus. The vaccine lymph was sterilised by the addition of ether, which had the advantage of killing off associated organisms and at the same time of not harming the specific agent; the ether could be readily removed by evaporation and its action thus stopped. The lymph which had been so treated remained active after incubation for months at 37° C., and was therefore suited for use in the tropics. Unlimited growth occurred in culture media without any visible alteration, and the infective dose after repeated subculture precluded the idea that proliferation of the virus had failed to take place. Certain microscopic appearances in the cultures after staining by Loffler's method were described as characteristic.

Prof. KRAUS (Vienna) dessribed experiments with the filtrable virus of fowl plague. His work emphasised the importance of testing various species of animals and of the same species at different ages. Also differences in various strains of the same virus were brought out. A certain virus isolated from a case of fowl plague was found to be infective for both young and old geese when inoculated intramuscularly, whereas the "laboratory" strain of virus failed to infect old geese, which, however, succumbed to intracerebral infection. The serum of old geese vaccinated with the avirulent strain had a prophylactic action against inoculation with the virulent virus. No growth was obtained in artificial media.

Dr. LAMBERT, along with Dr. Steinhardt (Columbia University), had cultivated with success the vaccinia virus in rabbit's cornea along with blood plasma *in vitro*. They employed vaccine lymph freed from glycerine by dialysis, and obtained a number of cultures without the presence of bacteria. The material used for cultiva-

tion was capable of producing only a small number of pustules on inoculation, but after growth for 18 days the culture gave rise to a confluent eruption. They concluded that multiplication of the virus had occurred along with the living growing corneal epithelium.

Prof. G. Sims Woodhead (Cambridge) had failed to obtain positive results on inoculation with filtered vaccine lymph.

Prof. C. J. Martin (London) described experiments conducted by Dr. Todd, of Cairo, on the virus of rinderpest, which showed that the causal agent of this disease did not pass through a Berkefeld filter. Starting with infective citrated blood which was active in a dose of 0·001 c.c., and subjecting this to centrifugalisation, the following results were obtained: the top layer was non-infective, the layer of red corpuscles contained the infective agent in only a hundredth of the concentration of the original whole blood, and the greatest part of the virus resided in the leucocyte layer. This appeared to suggest that the infective agent might be situated within cells.

Dr. Alan B. Green (London) had compressed the contents of vaccinia exudates into citrate solution, and so obtained a clear fluid which could be readily filtered. Every filtrate failed to give positive results on inoculation.

Prof. Loeffler, in concluding the discussion, said that in many cases there was a justifiable doubt as to the authentic character of alleged filter-passing viruses. Negative results had been obtained with trachoma. Prœscher, who had failed to pass the virus of rabies through filters, found that bacilli could be demonstrated in the infected tissues by means of an alkaline solution of methylene-agar. No generalisation of the facts of one disease could be applied to another.—*The Lancet.*

ROYAL SANITARY INSTITUTE CONGRESS.

Conference of Veterinary Inspectors.

Bovine Tuberculosis: Its Diagnosis. By W. P. Stableforth, F.R.C.V.S.

Mr. President and Gentlemen,—In acceding to the request of the local secretary of the Veterinary Conference of this Congress that I would write a short paper for discussion, I agreed, not that I had much original matter to bring to your notice, but rather to re-introduce an important subject for debate, one which we all know something about, and one that in view of the present legislation, would lend itself to a useful discussion. I propose to treat this subject as a veterinary inspector rather than a pathologist, with a view of arriving at a fairly correct diagnosis of the disease in life.

Clinical Appearances.

The clinical appearances are exceedingly variable, depending on the progress of the disease, the lesions, and their situation. Symptoms may be entirely absent in the early stage, and the writer has often found the most healthy to external appearances a member of the group which had reacted to the tuberculin test.

Generally speaking, the advanced tuberculous cow is unthrifty, the skin tight and adherent to the subjacent tissues, emaciated more or less, and often changes colour, becoming lighter in shade; the author has noticed this particularly in red cattle. Œdema of the intermaxillary space may be present, and enlargement of the glandular system; this is often pronounced in the region of the tongue, throat, neck, and when so, the patient often makes a variable noise, according to the glands involved, and the degree of interference of respiration. The glands principally attacked in this region are the parotid, sublingual, sub-maxillary, and post-pharyngeal. The animal may salivate and show difficulty in deglutition if there is any ulceration of the mucous membrane of the tongue or pharynx, or protrude nose and make a decided noise during respiration should the ulceration be in the larynx. If the lesions are confined to the glandular structures, the patient may only suffer inconvenience when feeding or during exertion.

In East Devon, where actinomycosis is very prevalent, the writer has found a very large percentage of these enlargements to be due to the actinomyces. One must also be guarded when dealing with fat cattle and pedigree stock which has been forced from birth; there is frequently an excessive accumulation of adipose tissue about the neck and throat, and when feeding or exerted, noisy breathing is often heard. In tubercular lesions of the throat, the subject may cough frequently, much louder and more pronounced than when arising from the chest; the slightest irritation is sufficient to excite an attack When the disease is located in the lungs the cough is soft, muffled, deep, and if accompanied with pleurisy the cough causing pain is short, suppressed, and produced with a careful movement of the abdominal muscles and practically a fixed thoracic wall. The cough may be paroxysmal, easily excited by pressure on the trachea, sudden atmospheric changes, and exertion; in fact a tuberculous cow, unless in the very early stages, cannot stand exertion, and will be found lagging behind her fellows. Frequent coughing without any decided cause ought to arouse suspicion.

The conformation of the chest wall, and the spareness of the ribs in most tuberculous cows lend themselves to aid diagnosis. The contents of the thorax are involved in about 90 per cent. of cases. The respiration may be accelerated, showing towards the end of the expiratory movement a secondary effort, similar to an animal affected with emphysema. Auscultation of the thorax in advanced tubercle, either with the stethoscope or unaided ear, reveals nearly every variety of sound, and this is easily understood when one remembers the great variation of the lesions which may be present, tuberculosis of the bronchi, lungs, pleura, pericardium, heart, with compensatory emphysema, adhesions, deposits, consolidated caseous patches, and enormously enlarged lymphatic glands.

Pulmonary tuberculosis should always be suspected when one finds a frequent cough, nasal discharge with emaciation, and if on auscultation the respiration is rough, inspiration rasping, expiration prolonged, blowing; with absence of vesicular murmur, and should snoring sibilant *râles* or cavernous *souffles* be detected, the inspector may be pretty certain from a clinical examination that he is dealing with tuberculosis.

In the early stages of tubercle of the respiratory tract there is little expectoration or nasal discharge, but later this is considerable. The expectorate is viscid, inodorous, greyish, occasionally offensive, containing pus, and yellowish grey caseous flakes. The symptoms of tuberculosis vary so much, depending on the organ attacked, that it is difficult to lay down any fixed routine for diagnosis, save that the examiner should remember that by far the greater number will be found in dairy stock, and the older the animal the more likely it is to have contracted the disease.

The general appearance must be taken into consideration—unthrifty conditions, tightness of the skin, dry staring coat, accelerated respiration, nasal discharge, cough, intermittent or persistent diarrhœa with tympany particularly if commencing with a newly calved animal, are all suggestive, and perhaps one of the most important symptoms during life is the enlargement of the superficial lymphatic glands, for the lymph glands are the most common seats of the disease. The glands which may be examined during life are the submaxillary, sub-lingual, parotid, prescapular, prepectoral,

precrural, tracheal, and cervical (if decidedly enlarged), mammary or superficial inguinal. Those at each side of the trachea at entrance to throat, between the two first ribs, can often be felt on palpation.

Tubercular Mastitis.—Tuberculosis of the udder is a chronic lension, seldom a primary one—usually a secondary infection from the abdominal cavity—or it may be a generalised lesion; the entire gland is occasionally affected, but it is usually one quarter, perhaps the posterior quarters are most often involved; the gland slowly increases in volume by a progressive chronic interstitial hypertrophy of the connective tissue. At first a small hard non-inflammatory growth can be detected; this often escapes notice, as the character of the milk for some considerable time remains unaltered. It is remarkable how quickly the growth proliferates, until the whole secreting tissue is replaced by a hard fibrous mass, which has been described by many as of wooden hardness. The patient evinces little or no pain on pressure, and the milk remains normal for some considerable time; this fact accompanied by the fibrous non-inflammatory condition of the quarter assists diagnosis considerably. The growth commences usually at the upper part of the gland, the milk gradually becomes less in quantity, thin, bluish, mixed with coagula, and later the secretions may be of a yellowish colour containing flakes. It is not often purulent as in acute or catarrhal mammitis. Rarely caseous centres break and discharge on the surface, the pus containing deep yellow particles of caseous material. The enlargement of the quarter is permanent, and is not followed by atrophy as in most other affections of the udder. The writer does not believe it possible to find tubercle bacilli in the milk unless there is a tuberculous lesion in the gland. A great number of competent authorities think otherwise, but surely it is because at certain stages the lesions are so minute as to escape both macroscopic and microscopic observation.

[The essayist then reviewed the methods of microscopic examination, tuberculin and inoculation tests, and concluded that section with the following extract].

The microscopic appearance of a tubercle, according to Stockman, is as follows: In the earlier stages the tubercles consist of a few large epithelloid cells, which have come from the fixed tissues, and a few leucocytes can be found; the bacilli may be so few as to escape notice. About the tenth day large multinucleated cells appear, known as giant cells; these have a homogeneous yellowish-looking centre with several nuclei towards the periphery.

Older tubercles show giant cells to be more numerous, yellow, structureless, caseous patches are to be seen, fibrous tissue will be seen at their margin, and some encapsuled and showing infiltration with salts. The bacilli will be seen, after suitable staining, between the cells and inside the giant cells. Many of the nodules will have undergone caseous necrosis, and have lost the above appearance.

Giant cells are found in lesions due to other organisms than the tubercle bacilli, such as actinomycosis, chronic interstitial mammitis. The presence of a lesion showing giant cells and acid-fast bacilli (staining after Ziehl Neelson) is diagnostic of tubercle.

Diseases Simulating Tuberculosis.

The diseases which may be confounded with tuberculosis are Actinomycosis, Johne's disease, and Parasitic gastro-enteritis.

Actinomycosis.—This malady is one which may easily be mistaken for tubercle from a clinical examination. One of its most common seats is the throat and tongue and its glandular structures. It is also met with in the udder, and cases are on record where the lesions of tubercle and actinomycosis have been growing side by side. Like tuberculosis, the parasite excites a fibrous proliferation, which causes hypertrophy and permanent hardness. At the onset the nodules are more discrete than those of tuberculosis, but later become confluent, and at this stage it similates tubercle. Actinomycosis has a greater tendency to suppurate and discharge. In the udder the growth is usually at the base of the quarter which points to infection by way of the teat. (Stockman).

To establish a diagnosis it is necessary to resort to the microscope. The parasite is seen in animals in colonies known as the ray fungus; they can be seen without any previous staining; also stain well by Plants and Gram's method, although the appearance in the discharge of small yellow or colourless grains, frequently cretaceous, are characteristic of actinomycosis.

In the absence of material for microscopic examination, the writer places the patient on the iodine treat- and has found that if the enlarged glands are due to the actinomyces or discomyces, there is a rapid diminishing of the growth as soon as the patient is saturated with iodine. A positive reaction to tuberculin does not prove otherwise, for the reaction may be due to tubercle located in some internal organ.

Johne's Disease.—This is another of the diseases closely allied to tuberculosis, and the writer has not the slightest hesitation in saying that in years past it was the rule to attribute at least 90 per cent. of the cases of chronic diarrhœa to infection of the intestinal tract with tubercle bacilli. It is extremely difficult to differentiate clinically tuberculosis from Johne's disease, and this must be done by eliminating the presence of any other disease.

Intestinal tuberculosis is characterised by intermittent or persistent diarrhœa, with the presence of tympanites after food. The appetite is capricious, and one will most probably find the superficial glands enlarged or other evidence of tuberculosis.

In Johne's disease the patient feeds normally, the appetite is good, rumination continues, and an infected animal will feed up to the finish, the character of the diarrhœa is most offensive, and tympany is hardly ever present. The tuberculin test will not always differentiate, although it will in the majority of cases.

A few weeks ago the writer recommended the destruction of a Jersey cow with emaciation, chronic diarrhœa of eighteen months standing; she was classified as tuberculous. Failing to react to tuberculin, the diagnosis was altered to Johne's disease. On post-mortem the cow was found to have generalised tuberculosis. An animal affected with Johne's disease will react to avian tuberculin, but not to bovine tuberculin; but we have not yet had sufficient experience of this test to fix its value.

It is more than probable that ere long we will have a diagnostic vaccine prepared from cultures of Johne's bacillus, as reliable for testing cattle for Johne's disease as tuberculin is for tuberculosis.

Parasitic Gastro-Enteritis. A disease characterised by a chronic fœtid diarrhœa, rapid wasting, anæmia, and œdema, occurring in young cattle from six months to three years old, and occasionally in older animals. It may also be accompanied by parasitic bronchitis; microscopic examination (with low power) of fæces will readily reveal ova and embryos of strongyles. The most common parasites causing this malady are *S. contortus. S. filicollis, S. gracilis*, etc. The disease resembles both Johne's disease and tuberculosis of the gastro-intestinal tract.

The writer has found the malady curable in a large number of cases by the administration of chlorodyne with lysol or coal-tar creasote.

The President said the stock owner and the authority would be largely affected by the correct or incorrect diagnosis of the veterinary inspector. There were points in the paper which would bear further

elucidation, and he hoped they would have a good discussion.

Mr. BOND (Plymouth) said he had been asked to open the discussion on the valuable paper they had just heard read, but he was somewhat taken aback, because he said this question had within the last 35 years come quite to the front, and they found the word "Tuberculosis" slipping off their tongues, much as the word "Mesopotamia" did from the tongue of the old lady who used to be so fond of reading the Bible. (Laughter). The first recollection he had of tuberculosis was in an article which was published in the old *Veterinary Journal*, which was then edited by John Gamgee. It was there called "Sandy lungs." To-day, however, everybody had got hold of the word "Tuberculosis." They had found that young cattle were exempt from its ravages. Tuberculosis was a question of housing. Wild cattle did not get it until they were put into captivity. The reader of the paper had said that the tuberculin test was to be relied on; but it was not considered so. They were not justified in saying that if they applied the tuberculin test and there was no reaction that the bullock was absolutely free from tuberculosis. The search for the bacillus was very difficult, but one of the highest authorities had stated that the test for it was easier than the final test for anthrax. They had as fine a means of getting at the facts as they ever would. He did not see the necessity for a full time man being appointed. He could do the work as well as a full time man. If he were called in and asked his opinion by the local authority, they wanted to know whether an animal was tuberculous or not. It was the business of the veterinary surgeon to find out whether the animal was right or wrong, and they must be men enough to back up their opinion before they gave the certificate, and not after. (Hear, hear). It used to be considered a great proof if the animals were wasters, but that was quite a distinct disease and easily noticed, and did not apply to tuberculous animals.

Dr. H. G. GAMLEN (West Hartlepool) said, from the experience he had had of treating human beings for tuberculosis, there was no doubt that the tuberculin test was most reliable with regard to cattle, but he could not agree with some remarks that he had heard there with regard to the tubercle bacilli. He tested thirty milks last week, and he found the tubercle bacilli in nine of them. Therefore he could not see the difficulty that some of them had found. He did it by the ordinary means that they used with regard to sputum. He also used the anti-formaline method. The same result could not have been got by ordinary methods of detection. He used the electric centrifuge, and examined 93 cells, three from each milk.

The PRESIDENT said nineteen or twenty yielded no bacilli. They also gathered that it was not at all sure whether these twenty samples were affected or not, but that Dr. Gamlen did not discover that they were. They must not expect to have perfection. If they did, they would surely stop in their work; if they could not give a counsel of perfection they must allow a little elasticity on the other side. He was very pleased to hear that remarks had been made of this character.

Mr. J. A. DIXON (Leeds), remarked that the question of bacteriological examination of milk samples was now of extreme importance to veterinary inspectors, and he did not think they could collect information on a more valuable or more important point. He had had some experience as an amateur bacteriologist. He had tested many samples with the view of finding the tubercle bacilli, but try as he would he had failed to find it. He was sure the microscope was not at fault. He was quite certain that, as Dr. Savage had said, with the most efficient operations and the best apparatus, mistakes would be made sometimes and cases would be missed; they had an opportunity to try this in every day work under the Tuberculosis Order. He had known cows which had presented unmistakeable evidence of tuberculosis of the udder to be examined by veterinary inspectors under the Tuberculosis Order; and, not satisfied with the clinical appearance, they had obtained samples of the milk of the cow and disregarded the clinical evidence. He thought that that was wrong. If they found the bacillus in the milk it strengthened them, but if they did not find it they should be quite content to go on without it. They should not regard the milk examination as superior to the clinical examination. The collecting of the samples was important and must be carried out by the inspector himself and under proper precautions. They would get a variety of microscopic organisms, the one-twelfth lense was quite a good one, but it was necessary to have a mechanical stage. He was surprised to hear Mr. Bond say that animals affected with tuberculosis did not become wasters. It had been his (the speaker's) short experience that wasters was an outstanding feature of old cases of tuberculosis. In the first month of the operation of the Order they slaughtered thirteen cows in his district and twelve of these were wasters. He thought one was slaughtered because she had tuberculosis of the udder. There was considerable danger in the diagnosis, as he had found in one or two cases. The tuberculin test was of the greatest value, and that was why he took up what some people regarded as a strong and arbitrary position with regard to agriculturists. Believing in the tuberculin test so thoroughly, he thought the farmer could, if he liked, obtain this test for every cow. A man could depend upon keeping his cows free from tuberculosis, and it was only a matter of carelessness and indifference that he did not do so. He (the speaker) had the utmost confidence in the tuberculin test. Quite recently he had noticed in some professional circles that there was a tendency to question the reliability of the tuberculin test. He though the day had passed when veterinary inspectors ceased to believe in the tuberculin test. (Hear, hear). The duties of our veterinary inspectors were most exacting, and the tuberculin test when properly applied was well worth while.

Mr. MALE thought they ought to discuss this matter thoroughly before passing on to another subject. There was one point which Mr. Stableforth made which he (the speaker) took exception to. Mr. Stableforth said that veterinary surgeons were not qualified for bacteriological work, and implied that they were not able to carry this out. That was hardly stating the facts. As Mr. Stableforth showed, he was a bacteriologist. Any one reading his paper could see that he was perfectly able to examine. Many other veterinary surgeons in the room were competent to carry on bacteriological work under this Order. (Hear, hear). Some bad gone to the trouble of taking a bacteriological course under experts, and they had taken every means to rub up their knowledge on this subject. He did not think, therefore, that Mr. Stableforth's statement was a correct one. He (the speaker) was also glad to hear the reliability of the tuberculin test taken up. In certain quarters the tuberculin test was rather taken exception to. There was one point which he thought they should insist on, that tuberculin must not be allowed to be used by veterinary chemists, farmers, and other people, and so destroy the utility of the test. (Hear, hear). In his own district veterinary chemists had gone round testing the cows as soon as the Order came in, at ridiculously low fees. Let them have tuberculin from the Pasteur Institute, or from the Royal Veterinary College, or wherever they liked, but they should see that it was not sold to those not qualified to use it.

Dr. H. KERR (Newcastle-on-Tyne) said he thought that in the memorandum that accompanied the Tuberculosis Order of 1913, the direction to examine the milk

microscopically emanated from the Medical Officer of Manchester, but he did not say that this microscopic examination should be the final examination. As to the practicability of clearing herds of tuberculosis, that was a point of which they were rather proud in Newcastle. In two or three large dairies the tuberculin test had been of the greatest assistance in keeping the tubercle from the milk, and in one or two of the large dairies they had a tuberculin milk test, which was used by the dairy people, and they sold their milk at market prices. During the present year, speaking off-hand, they had taken samples haphazard in the market for examination for tubercle bacilli, and from one big dairy they secured quite a number of tuberculous samples. In another big dairy, which had a very wide source of supply, they guaranteed the tuberculin test, and in that case the authorities had not one sample containing the tubercle out of the large number examined. The examination for the bacillus of tuberculosis was done at Newcastle by our eminent bacteriologist.

Dr. J. H. GARRATT (Cheltenham) said in his opinion the examination must be done by an expert to be reliable, otherwise the results were worse than useless. (Hear, hear).

Mr. R. GLOVER (West Ham) remarked that he wanted to get information, if possible, as to how local authorities were relying on bacterial examination locally, or how far they were consulting institutes where experienced, trained men were engaged.

The PRESIDENT replied that to a Congress of veterin- inspectors that was of extreme importance. It had been very commonly expressed that day that an expert should be called upon to examine the milk. The first question that came to his mind there was, what was an expert in the examination of milk for tubercle bacilli? That he was afraid, they could not define there, because they had no means of doing so. But as an individual who was engaged in the microscopic examination of pathological problems before many of those who were "expert" at the present day had much knowledge of any professional matters at all, he could not conceive what an expert was if he was not a veterinary surgeon, who had been educated in pathological processes, had had two years in a laboratory, and had rubbed up his knowledge afterwards in a special course. What expert knowledge did they require other than this to render a man capable of examining for tubercle bacilli in milk? (Hear, hear). Prof. Delépine, whose expert knowledge nobody could possibly question, nor the breadth of view with which he always faced such matters, had said that the properly qualified veterinary inspector had the power of picking out infected cows and notifying certain dairies as harbouring the tubercle bacilli. They could go to the dairy, pick out the cow, remove her, and insure that the supply of milk was free from infection.

Mr. J. A. DIXSON (Leeds): That is so.

The President said that was all they wanted (Hear, hear). The veterinary surgeon was quite capable of examining for tubercle bacilli and rendering that milk supply perfectly safe; and what was worse, he attributed to him the power to diagnose tuberculosis by the ordinary means of observation. He valued most highly the application of the tuberculin test if it was carried out in a proper manner. But even the value of a tuberculin test would depend very largely on the individual who carried it out. There was no question about that (Hear, hear). He thought himself that really they had the machinery that was capable of rendering milk practically free from the tubercle bacilli which emanated from the bovine. Whether legislation on the point was sufficient to make that applicable was another matter

Mr. STABLEFORTH, in reply to Mr. Bond and the tuberculin test he was surprised to hear him say that it was unreliable. The only unsatisfactory thing about it was that in an advanced case it sometimes needed confirmation by the biological test. With regard to Dr. Gamlen and the milk mistakes, he thought Dr. Gamlen said he had examined thirty cases, with positive results in nine. He (the speaker) asked what other tests were applied to the remainder of the milk. Had the others been subjected to a biological test, he would have found how they stood.

Dr. GAMLEN said a large proportion of the others would have tuberculin.

Mr. STABLEFORTH said he was afraid Mr. Male had misunderstood him in regard to a veterinary surgeon not being equipped. He (the speaker) did not say that they were not capable of making a bacteriological examination of milk, but he did say that in a difficult case they were handicapped in giving a correct diagnosis. He was acting for the Devon County Council, and part of his instruction was not to apply the tuberculin test more than was necessary.

VICTORIA VETERINARY BENEVOLENT FUND.

The quarterly meeting of the Council of this Fund was held at 10 Red Lion Square, London, on Thursday, July 3rd. There were present Messrs. Dunstan, Slocock, Sumner, Garnett and Shipley.

The minutes of the previous meeting were read and confirmed.

On the proposition of Mr. S. Wharam, seconded by Mr. Abson, Mr. R. C. Trigger, J.P., was unanimously elected President for the ensuing year.

Messrs. Freeman Barrett, P. J. Simpson, E. A. West, and W. Burt were elected Vice-presidents.

Mr. SHIPLEY was re-elected Secretary and Treasurer on the proposition of Mr. Abson, seconded by Mr. Garnett.

SECRETARY'S REPORT FOR THE QUARTER.

To the Members of the Council of the Victoria Veterinary Benevolent Fund:

The annual meeting of the Society was held at 10 Red Lion Square, London, on Wednesday, June 4th.

First, I think, I should call to your notice the handsome donation of a cheque, value £70, received from Mr. P. J. Simpson, of Maidenhead, the result of his efforts in producing a play for the benefit of our Fund. I have received from him the following letter:—

Maidenhead, May 13th.

Dear Sir,—I have very great pleasure indeed in enclosing you a cheque for seventy pounds as a donation to the Victoria Veterinary Benevolent Fund.

This amount represents the profit on the performances of "Sweet Lavender," and the generous result of my appeal to my clients and friends for donations to the Fund. I enclose you a short balance-sheet showing how the amount is arrived at.

I leave the disposal of the amount to the discretion of the Council of the Fund, but I throw out the suggestion that if sufficient money can be obtained to add to it, and ensure a place for a boy or girl in some institution, that is what I should like to see it used for, but this is only a suggestion.—Faithfully yours,

P. J. SIMPSON, (Signature), F.R.C.V.S.

We owe a debt of gratitude to Mr. Simpson for the work he has done for us, and can only hope that this will be emulated by other members of the Council. I shall be glad of your instructions as to the disposal of this sum which I have temporarily placed on deposit.

Financial Statement.—We have expended in the half year to June 30th £179 7s. 4d. Our income has been £257 17s. 5d. We have therefore a balance of £81 2s. 1d. Outstanding subscriptions amounted to £60 15s. Dividends £48 3s. 9d., making a total, if all outstanding

subscriptions are paid, of £190 0s. 10d. to meet a liability of £174 for relief. If any fresh cases occur this will leave practically no money to help, and no balance for incidental working expenses.

We have now thirty-two members of the Council. If I could only induce them to find two subscribers each to our Fund how much better off we should be.

We are also greatly indebted to the veterinary press for the help they have given us, and I especially appreciate very much their kind remarks.

I have to report the death of Mrs. Johns, which occurred in Edinburgh in a nursing home. I have received communications from the Secretary of this home referring to the final expenditure for funeral expenses, and would suggest to you that we remit a cheque for two pounds towards these. A sum of three pounds has already been remitted by the National Veterinary Benevolent and Defence Fund towards this object.

I would recommend that the grants to all the old recipients be continued.

Further investigations in the case of Miss Worsley have been made, and on the recommendation of Prof. Dunstan, a cheque for ten pounds was remitted.

Further applications for relief have been received from Mrs. Shivas. On the authority of the Finance Committee a cheque for two pounds was remitted. May I suggest that a grant of 5s. per week be made in this case.

An application from Prof. O'Connor, Secretary of the ommittee in Ireland, on behalf of Mrs. Margaret Walsh, referred from the last Council meeting, has been considered by the Finance Committee, and an immediate grant of five pounds was made on their recommendation, and I suggest that a further weekly grant of 5s. be made.

I regret that many annual subscriptions are still in arrears, in fact some £60 is required for this quarter. I hope, however, to give them all a reminder in the course of time. I wish I could instil on the minds of those subscribers that the unnecessary expense in postage and literature which is thus entailed materially lessens the amount available in the working of the Fund.

A few new subscribers have been enrolled since the last annual meeting.

List of New Subscribers, from April, 1913.

Bowden, J. Scott, Whitehaven	£1	1	0
Vaisey, T. L., Board of Agriculture		10	6
Alexander, T. J., Kinsale, Ireland		10	6
Cundall, F. H. W., Swindon		10	6
Sewell, A. J., London	5	0	0
Watson, A., Dublin		10	6
Marriott, S. W., R.V.C., London		10	6
Anderson, W. H., Uxbridge		10	6
Meadows, D.. India	3	0	0

Mr. GARNETT proposed, and Mr. Slocock seconded, that the donation from Mr. Simpson be left on deposit at present with a view to attempt to carry out his wishes.

The SECRETARY pointed out that a sum of £90 would be required to get a child into a charitable institution with a view to education.

Mr. Simpson gave a further cheque of £3 4s. 5d., donations received since the remittance of the last cheque.

On the proposal of Mr. Abson, seconded by Mr. Garnett, a hearty vote of thanks was given to Mr. Simpson for his gift, and the Secretary was instructed to write expressing the Council's gratitude.

Proposed by Mr. Sumner, and seconded by Mr. Burt, a sum of £2 be sent to the Secretary of the Home in Edinburgh towards the cost of the funeral expenses of Mrs. Johns, an old recipient.

The Council confirmed the action of the Finance Committee in making grants to Mrs. Shivas and Mrs Walsh.

A weekly grant of 5s. each was voted to Mrs. Shivas and Mrs. Walsh, on the proposition of Mr. Burt, and seconded by Mr. Wharam, the finances of the Fund being insufficient to make a larger allowance.

Cost of Tuberculosis Order in Cornwall

At the quarterly meeting of the Finance Committee of the Cornwall County Council, the Chairman said that at the last meeting a considerable sum was provided for the matter of tuberculosis in cattle, and although the Order had been in operation only two months, accounts amounting to £363 12s. had been received by the Contagious Diseases (Animals) Committee. The special point which should be brought to the notice of the Committee was the very heavy charges made by the veterinary surgeons for examining the animals.

The Hon. John Boscawen said a sub-committee had been appointed to consider the whole question, and he thought it would be wise to postpone the payment of the bills until the sub-committee had met.

The Chairman inquired whether the Contagious Diseases Committee had any control over the veterinarians' charges.

It was stated that the Committee could make their own scale of charges, but had not done so, and the Committee had, pending the drawing up of a scale and regulations, provisionally adopted the scale of the National Association of Veterinary Surgeons.

Mr. Hawk asked what had been received in the matter of salvage in the cases of diseased animals, and it was stated that no figures could yet be given, because the amounts had not been received, except from one police district, where the sum was £10.

Mr. Hawk suggested that no provision had been made for salvage. When an animal was not seriously diseased it should be taken to a slaughterhouse. It might be that three-parts of the carcase was fit for human food. Instructions had not been given to take them to a slaughterhouse,

Mr. Liddell (assistant clerk) stated that instructions had been given when the forms were sent out a month or six weeks ago to the police and to every veterinary inspector in the county.

Mr. Boscawen said that in one or two cases the diseased carcases had been sent to the knacker's yard, and the money was being collected.

The Chairman said it was extremely necessary the Committee should draw up their own scale of salaries. He noticed a charge of two guineas was made for applying the tuberculin test, which meant four visits, but he understood that any intelligent man could take the temperature of a cow and report to the veterinary, and this would save two visits. In all the cases four visits had been charged for at the rate of 10s. a visit. "That," he said, "is rather more than a doctor gets for attending me." (Laughter). They could not dispute the payment of compensation. In every case the animal had been properly valued, and the compensation had to be paid.

Mr. Bain said he believed some of the veterinarians claims were not in accord with the Veterinary Association's scale, but below it.

The Chairman: The scale in my opinion is too high.

Mr. Bain inquired the amount due for compensation, and the amount charged by the veterinary surgeons, and the Chairman replied that the figures were £108 10s. and £206 3s. 6d. respectively. The veterinary surgeons' bills were nearly twice the amount of the compensation,

Mr. Bain asked if one district was not enormously high.

The Chairman replied that it was the Camelford district, a part which one would have been inclined to believe was healthy. The veterinary inspector in that district had a bill for £88 5s.

Mr. Bain: Wasn't it found that a large proportion of the animals were not suffering from tuberculosis at all?

The reply by the Chairman and Mr. Liddell was that it was the other way about. Of a total of 27 in the Camelford district, four only were found not to be diseased. One other died before valuation could be made, and another was slaughtered by the owner before the veterinary surgeon could do anything to it.

Mr. Thomas suggested that, considering the amount the County Council were called upon to pay in the short time the Order had been in operation, it would be proper for the sub-committee to take into consideration the question of the appointment of a whole-time veterinary inspector for the county. (Mr. Boscawen: Hear, hear).

The Chairman thought the sub-committee should bring up a full report on the whole subject, including the question of a reduced scale of charges on the employment of a whole-time inspector.

Mr. Boscawen said in the scheme he was going to lay before the sub-committee he had thought of having a veterinary inspector for the county, a whole-time officer, who should be under the medical officer of health and attached to the sanitary office, with which department he would be associated when the Milk Bill was passed. —*The Western Morning News.*

Tuberculosis Order, 1913.

Prosecution at Hereford.

At the Hereford Police Court, on Thursday, 21st ult., before the Mayor (Mr. H. Walker), Alderman James Corner, Mr. F. H. Merrick, Mr. W. Ashburner, and Mr. C. Hatton, Arthur Allington, farmer, of Barr's Court, was summoned for not reporting two cases of tuberculosis in bovine animals and failing to disinfect his premises on July 25th.

Defendant pleaded ignorance.

Mr. E. A. Caple said the Order came into operation on May 1st, and that was the first prosecution of the kind in the county. The two cows were in a deplorable condition, one in particular, and the animals, on being slaughtered and a post-mortem examination being made, showed definite signs of tuberculosis. He hoped the Bench would inflict such a penalty which would serve as a warning to others.

Albert Coles, a clerk in the Town Clerk's office, produced a pamphlet which had been published and circulated, giving a full text of the Order. No notice was received from defendant of the cases of tuberculosis.

Defendant said he had never seen the pamphlet.

P.C. T. Edwards said he served a copy of the pamphlet at defendant's residence on April 21st, leaving it with Mrs. Allington.

Detective Ovens said that on the 24th ult., in company with Detective Hoskins, he was in the neighbourhood of defendant's farm, and saw a little red cow in the meadow, which was in a very poor condition. He noticed a brindle cow, a little red Hereford, and a Shorthorn, which appeared very thin. It appeared to him to be be tuberculosis. He reported the matter to the Chief Constable, and acting on his instructions called in Mr. Barling, veterinary surgeon, to examine the cattle. He accompanied Mr. Barling to the farm on July 25th, and in a stable adjoining the house he saw a cow in an extremely poor condition. Mr. Allington was away, but he saw him the following day, and accompanied him to Mr. Barling's. Mr. Barling told defendant in his presence that two of the cows would have to be destroyed, as they were in an advanced stage of tuberculosis. No notice had been received of the disease.

Mr. James Barling, M.R.C.V.S., said he visited defendant's premises with the Chief Constable and Mr. Ovens. They found a red and white cow in a stable adjoining the house, and he did not think he ever saw an animal so poor and emaciated in his life. It was suffering from tuberculosis in an advanced stage, and must have been suffering for months.

Alderman Corner: Was the condition such that it must have attracted the attention of persons seeing the cow?

Witness: Undoubtedly. Continuing, witness said that they saw in a meadow 31 cows and a calf, and three of the cows were looking suspicious, and he had to report them under the Tuberculosis Order; a brindle cow in particular, with calf.

Defendant: I am not summoned for that.

Witness: No, but I am bound to refer to them in my report. Witness said they then found in another building a red cow with a white face in a semi-conscious state, and undoubtedly suffering from tuberculosis. He saw defendant on the 26th (the day following) and told him the cows would have to be destroyed. They agreed as to the price to be paid under the Order. If a cow was tuberculous, 30s. was paid, less expenses.

Alderman Corner: The net result is that the owner of the cattle gets practically nothing.

Defendant: Not a penny-piece.

Mr. Sidney Protheroe, sanitary inspector, said he had received no intimation from the defendant of the disease.

Alderman Corner (to Mr. Barling): What is the effect upon the other cattle where tuberculous cattle are allowed to move amongst them?

Mr. Barling: It is undoubtedly contagious, not only to the other cattle, but to children. It is absolutely dangerous.

Defendant, on oath, said one of the cows had had a calf, and he thought its condition was attributable to that fact. He added; "I certainly don't say they were all right, because I don't think they were, but I did not think they were tuberculous. It is a very deceptive disease."

Alderman Corner: But they actually attracted the attention of the police officer.

The summons for failing to disinfect was then proceeded with.

Defendant said he did what was required. He had not seen the Order.

Detective Ovens said that disinfection had not been carried out four days after the notice to do so had been served upon defendant. The cleansing was not carried out until ten days had elapsed.

Mr. Barling said the condition of the buildings was very bad.

Mr. Protheroe, recalled, said he had not visited the premises since defendant gave up providing milk, some two years ago. He devoted his attention mainly to dairy farms, and this was a stock farm.

The Bench retired, and after a lengthy consultation, the Mayor announced that they found the cases proved. As this was the first prosecution of the kind they had decided not to take such a serious view of the matter as they otherwise would have done. In the first case, defendant would pay £5 in respect of each cow, and £2 4s. 6d. costs, and in the second case he would be fined £1 and £1 0s. 6d. costs, a total of £14 5s.—*The Hereford Journal.*

DISEASES OF ANIMALS ACTS 1894 TO 1911, SUMMARY OF RETURNS.

Period.	Anthrax. Outbreaks Confirm'd	Anthrax. Outbreaks Reported	Anthrax. Animals Confirm'd	Anthrax. Animals Reported	Foot-and-Mouth Disease. Outbreaks	Foot-and-Mouth Disease. Animals.	Glanders † (including Farcy) Outbreaks	Glanders † (including Farcy) Animals.	Parasitic Mange. Outbreaks	Parasitic Mange. Animals.	Sheep Scab. Outbreaks	Swine Fever. Outbreaks.	Swine Fever. Slaughtered. *
GT. BRITAIN. Week ended Aug. 23	6		8				4	4	14	28	2	38	704
Corresponding week in 1912	4		4		3	7	2	2	19	24		34	421
Corresponding week in 1911	14		22		1	5	3	3				41	320
Corresponding week in 1910		29		34			11	17			3	18	156
Total for 34 weeks, 1913	373		410				113	294	1896	3828	129	1672	22607
Corresponding period in 1912	554		630		70	442	120	228	2336	5074	170	2188	28379
Corresponding period in 1911	562		707		8	425	127	305			306	1737	20257
Corresponding period in 1910		980		1186	2	15	248	762			335	971	8712

† Counties affected, animals attacked: London 1, Middlesex 2, Worcester 1.

Board of Agriculture and Fisheries, Aug. 26, 1913.

IRELAND. Week ended Aug. 23	...	...	...	...	...	...	Outbreaks ...	8	4	47
Corresponding Week in 1912 ...	...	...	...	3	...	...	1	...	2	13
Corresponding Week in 1911 ...	...	...	...	...	...	...	...	3	2	68
Corresponding Week in 1910 ...	...	...	...	...	...	...	4	2	...	20
Total for 34 weeks, 1913 ...	...	...	...	...	...	...	96	366	110	652
Corresponding period in 1912 ...	3	3	21	216	...	...	52	261	172	1454
Corresponding period in 1911 ...	7	12	...	...	2	3	49	253	91	1575
Corresponding period in 1910 ...	5	8	...	...	1	2	52	342	71	1693

† These figures include animals slaughtered and found affected on post-mortem examination.

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, Aug. 25, 1913

NOTE.—The figures for the Current Year are approximate only. * As Diseased or Exposed to Infection

Electrical Sterilisation of Milk.

At the English-speaking Conference on Infant Mortality, held at Westminster, Dr. E. W. Hope, medical officer of health for Liverpool, mentioned that a large number of careful experiments had been made during the last two years with the view, if possible, of lessening the cost of sterilisation, and careful researches had been carried out at the University of Liverpool by Professor Beattie and others in regard to the electrical sterilisation of milk in flow. The upshot of these investigations showed that by electrical methods, milk could be effectually sterilised, all extraneous organisms being destroyed. No change whatever took place in the milk; the flavour, taste, chemical composition, and so forth being absolutely the same as in pure, fresh milk. The process was very much cheaper than the ordinary Pasteurisation by heat. Various pathogenic organisms had been experimented upon, with perfectly satisfactory results. The Corporation had authorised the installation of a plant at one of their depots for this process, which had now quite passed any experimental stage, and which had, he believed, a very valuable future before it.—*Farm and Home.*

The New Forest Ponies.

Two years ago the Burley Association of owners and breeders of New Forest ponies decided to try the experiment of offering a limited number of premiums for mares and fillies turned out in the forest which had never been hand fed. These ponies are practically wild, gaining their own living in the forest. In secluded haunts the foals are born and remain with their dams, dependent on them for their food. Of these foals a certain number are taken up and sold as suckers every year, but others are never handled at all, and are left out till they in their turn develop into brood mares and stallions. For two years past the Burley Association has directed its attention to these forest-haunting mares, distributing premiums in such a way as to encourage the owners, many of whom are small holders and working men, to retain the most likely mares for purposes of breeding. It is these non-hand-fed ponies which are the backbone, both physically and commercially, of the forest breeds of ponies. For, as one of the most experienced of forest pony men, Mr. Charles Evemy, now the senior agister, remarked to me, "As soon as you begin to feed your ponies the profit vanishes."

But this is not the only reason for encouraging these wild creatures, for after a week spent in most careful examination in all parts of the forest, the judges found that the ponies which were the best shaped, the finest movers, and by far the best in condition, were those which gained their own living on the forest without assistance. One of the oldest owners explained the reason of this. The most valuable quality of a forest mare is self-reliance and resourcefulness, and this, it appears, is easily lost if an owner, thinking to improve their condition, once begins to feed them, for the animals soon lose their will and desire to shift for themselves. They go back, it is true, into the forest when their ration is consumed, but cease to range widely and search closely for the varieties of food which the forest affords to their wilder sisters. They crop listlessly here and there, never wandering far from the homesteads, and they spend much of their time crouching in the

shelter of bushes. They lose condition, and can be easily distinguished from the true wild ponies by their poverty of appearance, their unthrifty coats, and their too often misshapen forms.

The wild pony ranging over many miles in search of food exercises herself and her foal, hardens the bone, develops muscle, and actually puts on flesh. It is in these bolder spirits that one sees the remarkable action characteristic of the true forester. The best have a free, level action, use their shoulders, flex the hocks in a delightful manner, and trot or gallop smoothly over the roughest ground without a false step or a mistake. Nothing stops these ponies, and I saw four in succession which were being gently moved for my inspection trot quietly up to a stream with a bad take off and a boggy landing, and each in turn cleared some 6ft. without hesitation and perfect ease.—*Field.*

The Traffic in Old Horses.

The Board of Agriculture issued on Monday, Aug. 25, the annual report for 1912, of proceedings under the Diseases of Animals Acts and the Markets and Fairs (Weighing of Cattle) Acts [Cd. 6737].

The Assistant Secretary, Animals Division, Mr. A. W. Anstruther, states that the shipment of old horses to the Continent is now carried on under greatly improved conditions, and that in view of the exceptionally heavy storms in the last quarter of the year, the percentage of losses must be regarded as very small. From Jan. 1 to December 22, 15,734 horses and one donkey were shipped from English ports to Rotterdam; no complaint was received from the Dutch authorities as to their condition. The total number of horses shipped to Antwerp during the year was 17027 and 16,988 arrived without injury. The others died on the voyage. The number exported to Ghent from Great Britain and Ireland was 8,265, viz., from London 5,399 horses, two mules, and four donkeys; from Hull 1,788 horses; and from Goole 1,078 horses. Of these 1961 were working horses and described as carriage horses, hacks, hunters, and troop-horses, 1725 were five years of age and under, 236 horses over six years of age were tested with mallein, and 5304 were slaughtered for food, principally for sausages. The casualty returns were under one per cent.; 5,891 horses were exported to Amsterdam and, notwithstanding the exceptionally heavy storms during October, November, and December, the animals arrived in good condition and the injuries reported were only 31 for the year. The deaths numbered 84.

The veterinary inspector who in the course of his duties visits railway stations in connection with the conveyance, watering, and feeding of horses in transit reports that, in consequence mainly of the action of the inspectors of the Society for the prevention of Cruelty to Animals, the various railway companies concerned have now decided to take concerted action in this matter. Arrangements have been made by which all live stock will be fed and watered, and special labels will be attached by the railway officials to each truck, showing when and where the animals were last fed and watered, and the officials at all stations have instructions to examine trucks containing live stock on arrival. He reports also a great improvement in the condition of the trucks used for the conveyance of animals, owing to the supervision exercised by the officers of the local authorities.

The report also gives a detailed history of the outbreaks of foot-and-mouth disease in Great Britain in 1912. The disease was detected in 16 counties—15 in England and one in Wales. The animals attacked were 512 cattle, 40 sheep, and 93 swine; and the animals slaughtered as diseased or as having been exposed to infection were 3,084 cattle, 6,410 sheep, 890 swine, and five goats.

In 1912 1,756,277 dog licences and licences for hounds were issued in England and Wales, and 126,728 in Scotland. These figures show an increase of 50,394 in England and Wales, and 5,770 in Scotland as compared with 1911.

Hydroquinine Hydrochloride.*

A quinine substitute of synthetic preparation has been placed on the market. It differs from quinine by the addition of two more atoms of hydrogen per molecule, and is in the form of white crystals of very bitter taste, very easily soluble in water and also in alcohol, but insoluble in ether. The toxicity of this alkaloid is about the same as that of quinine, if anything slightly less. As an antimalarial specific it is said to be superior to quinine hydrochloride, and possess as well the great advantage of much higher solubility. A future is also anticipated for hydroquinine as a trypanocidal drug, both in animals and in mankind. Intravenous and intramuscular administration is much more conveniently carried out than with quinine salts, owing to the solubility and consequent small bulk of a given dose. Lenzmann has, it appears, been treating whooping-cough with this new drug, injected intramuscularly, with excellent results.

(Vereinigte Chininfabriken Zimmer und Co., Frankfurt. London Agents: Widenmann, Broicher and Co., 1 Fenchurch Avenue, E.C.)

Tuberculous Poultry.

Relative to the inspection of the food supplies at Smithfield, the last report of Dr. W. Collingridge, issued in his capacity as Medical Officer of Health, contains the following statement:—

"Attention is being directed to the prevalence of the disease in poultry by making a post-mortem examination of emaciated fowls, condemned as unfit for food, in the City Markets. Those examinations are proceeding, and at present it is sufficient to state that 50 per cent. of poor quality fowls are affected with tuberculosis, and in a degree which requires to be seen in order to realise its importance."

Swine Fever Serum.—It is estimated that 6,000,000 pigs were lost through swine fever in the United States last year, and a considerable proportion of that loss, the Department of Agriculture declares, is due to the supply of bad serum for the inoculation of the animals, by private firms whose concoctions are not tested. To prevent this abuse the Department has issued an order placing all makers of swine fever serum under the supervision of the Bureau of Animal Industry. They will have to register under the Bureau, to label their products, and to conform to certain sanitary requirements.

Boy Shot by "Humane Killer."

The accident occurred at Comeragh Mews, West Kensington. A horse which had become unfit for use was despatched in the yard belonging to the Mews, and the bullet passed through the fore portion of the animal's neck and entered the head of a nine-year-old lad who was standing in the road beyond. The boy was taken to the West London Hospital, where a bullet was found in his head, having entered near the right eye. It is feared that he will lose the sight of the eye.

The Handling of Wool.

At the annual meeting of the Royal Agricultural Society at Bristol, Mr. J. W. Elwes suggested that that Society should appoint an expert to advise growers in the handling and disposal of wool. The members of the British Wool Buyers' Association complain, and complain with cause, that many farmers are not so careful in the grading and get up of their wool as they might be. In many cases no attempt is made to classify and render uniform the different classes of clips. In others, brock, clods, vegetable matter, and all kinds of broken and detached portions, which ought to be set aside from the first, are freely rolled up with and included in the major bales without any intimation of the fact being made to the broker. The result is that when the wool reaches the manufacturer it is either in large measure rejected altogether or the broker has to stand in and accept a reduction in price. It is not to be expected that the purchaser will accept a situation of that sort without protest. He simply protects himself the following year, and either refuses to deal with the particular grower altogether, or offers such a reduced price as he fancies will leave ample margin of cover. The Colonial, in this matter, has long since learned his lesson as the result of bitter experience. No small part of the high reputation which colonial and other wools now enjoy on the London and other British markets is due to the fact that it is carefully classed and graded before being baled. The value of British wool is not the insignificant item that is sometimes supposed. At present it is worth about 2½ million pounds per annum, and it is confidently expected that it may become of even greater value in the near future.—*N.B.A.*

Spring in Australia.

August finds the brief, mild Australian winter already breaking, and the countryside alive with the first signs of spring. The natural grasses are moving and making good feed for live stock, although as yet they are far from their best. The farmers of the Commonwealth are welcoming the summer, while they in Britain are making preparations for the long months of winter. The passing from winter to summer in Australia is not as it is here in the north. The native evergreen vegetation prevents those sharp divisions of the seasons familiar to Europe, but still the changes are clearly marked, the leaves do not fall, they take on a livelier green as summer approaches, and shrubs are beautiful and fragrant, with a wealth of blossom. The land, too, becomes a wide garden of wonderful wild flowers. The Australian wild flowers are sometimes charged with being scentless and this is true of some of the most beautiful blooms. But there is compensation in the delightful perfume of the blossom of the wattle and the gum. The gum (eucalyptus) blossom varies in coour according to the species and location; sometimes it is a gorgeous red, sometimes pink or yellow. The Scotsmen and Englishmen in many parts of Australia find the spring almost as pronounced and as stimulating as they do in their native land in the north.

ARMY VETERINARY SERVICE.

Extract from *London Gazette.*

War Office, Whitehall, Aug. 26.

Regular Forces. Army Veterinary Corps.

The following Captains to be Majors, under the provisions of Article 341, Royal Warrant for Pay and Promotion, 1909:—

E. B. Bartlett. Dated May 19.
G. Conder. Dated July 6.
A. J. Williams, F.R.C.V.S. Dated July 6.
J. J. Griffith, F.R.C.V.S. Dated August 24.

The Price of Army Horses.

The Argentine Rural Society have just published some very interesting figures with reference to horses for the Army. In April last a show of Army remounts was held, at which 577 horses were entered. Of this number 432 were bought for the Army at prices ranging from £26 4s. to £52 8s., and an average from £37 11s. 8d., and practically all the rejected horses were bought by the local municipality. If this can be done in a country where horses are notoriously cheap and cost very little to rear, how is it that in England the War Office cannot give a *paying* price to breeders of this class of horse? W. T. Hall, in *The Live Stock Journal.*

Personal.

Mr. W. F. Houston, M.R.C.V.S., Paisley, acted as judge in the light horse class at the annual show of the Islay, Jura, and Colonsay Agricultural Association at Bridgend, Islay, on Thursday, 14th inst.

Mr. G. Parker Short, M.R.C.V.S., Torquay, has been appointed Honorary Veterinary Surgeon to the Torquay and Devon Canine Association.

OBITUARY

Mr. Charles Sutton, a Peterborough veterinary surgeon, took hydrochloric acid in mistake for spirits of camphor, and died shortly afterwards.

[We do not find this name in recent editions of the Register. It appears that Charles Sutton, M.R.C.V.S., who graduated in 1869, was taken off the Register as deceased in 1909.]

Nisbet.—At Boundary House, Fence Houses, on the 26th inst., Ann, wife of J. Brodie Nisbet, F.R.C.V.S.

The death is announced last week of Mr. David Young, the able and widely-known editor of *The North British Agriculturist*, from 1887 to 1911.

"Mr. Young was the son of a farmer, born at his father's farm at Smediton, near Carmyllie, Forfarshire, in 1852. He followed the plough in his early days, and on the death of his father, took over the farm, and, for five years carried it on, completing the then-current lease.

As a journalist, Mr. Young had a retentive memory and a quick, well-informed mind for dealing with facts, and this found expression in a style which was at once outspoken, trenchant, and telling. He dearly loved a controversy, and was in his element when breaking a lance with either friend or foe. Of him it may justly be said, in the poet's words—

> "He can distinguish and divide
> A hair 'twixt south and south-west side;
> On either side he can refute,
> Confute, change hands, and still dispute."

He was nevertheless a man with high ideals of truth and justice, and many found in him a warm-hearted and steadfast friend, as well as a pleasant and genial companion."—*N. B. A.*

Government Publications.—Messrs. Wyman and Sons (Ltd.), have published the following, the prices including postage:—Annual Report of Board of Agriculture *re* Diseases of Animals Acts, etc., 1s. 2d.; Return *re* Experiments on Living Animals during 1912, 9d.; Dogs Protection Bill: Report, 2½d.

CORRESPONDENCE.

UNSUSPECTED TUBERCULOSIS.

Sir,

I have read with much interest the note under the above heading which appeared over the name of W. Brown, Worksop, in your issue of the 10th inst.

In my limited experience I have also noticed similar phenomena at times; that is to say, that an animal shortly after parturition developed acute tuberculosis; and it is an aspect of the disease that has attracted my attention to a great extent. I would like therefore to ask Mr. Brown if these animals showed any symptoms of tubercular disease before pregnancy?

In his note it is stated that the act of parturition acted as an exciting cause. If I may be allowed to say so, I am rather of opinion that the fact of pregnancy acted as a deterrent to the development of the disease, and that it was the cessation of the pregnant condition which permitted of its growth. This may appear to be a quibble, but in some cases it may be an important quibble, as it undoubtedly is in human medicine.

During a chat with some medico friends I happened to remark that tuberculous people were apparently as fertile as the daughter of Latona, when one man who had a large practice in an industrial district replied, "Yes, and that is not the worst aspect of the case, and tuberculous women realise that pregnancy deters the ravages of disease and therefore strive all they know to get into "an interesting condition.'" He informed us that in his district he knew at least two cases where women were keeping themselves alive by such means.

Osler says "pregnancy may hold the progress of the disease in abeyance," but asserts that there may be truth in the axiom of Dubois, "If a woman threatened with phthisis marries she may bear the first accouchement well, a second with difficulty, and a third never."

I put forward these few remarks with diffidence in the hope that some of our experienced practitioners may be tempted to write on the matter from their standpoint, and thus raise a point which is not without interest to our stock-breeders.—Yours faithfully,

MOMPARA.

August 27.

MILK FEVER.

Dear Sir,

In your issue for July 19th, 1913, I note "Milk Fever: Suggestions for Prevention," the author, Mr. W. E. Blackwell, M.R.C.V.S., calls attention to the value of leaving a good supply of milk in the udder as a pressure agent. In discussing the probability of the condition being a toxemia, he assumes the possibility of the pressure stopping the entrance of the supposititious toxin into the circulation. Now, assuming the presence of toxins in the blood as the cause of the very grave symptoms exhibited in "milk fever," how can ballooning the udder with air or oxygen, or dilating it with solution of KI., normal saline solution, or even water, exercise any beneficial influence on the condition of the patient? It is not the toxin *in* the udder, but the toxin that has got *out* of the udder that kicks up the trouble—if a toxin is the cause of the condition. And to admit that air, oxygen, or medical solutions gain access to the circulation—at least in case of the air or oxygen—is absurd. Furthermore, to believe that blowing up the udder by means of a bicycle pump (a common emergency method in my country) would neutralise a toxin and stop its formation in a comparatively few minutes, leaving the patient not recovering, but to all intents and purposes well, implies credulity. Is it not well to rest on the fact that ballooning the udder is almost a specific treatment, and say that we don't know the cause! Like Mr. Blackwell, I am an agnostic in the matter.—Yours truly,

THOMAS B. ROGERS.

Woodbury, New Jersey, U.S.A.
August 14.

Sir,

Regarding Mr. Blackwell's suggestion appearing in the issue of the 19th ult., I have always noted that in districts in Ireland where it was the rule to leave the calf "on the cow" for 24 hours, cases of milk fever were practically unknown; whereas in other localities, where the custom was to remove the offspring at once and feed it from the pail, milk fever was general.

Just now, I have in my mind a practice in Scotland, where latter arrangement was by dairymen strictly adhered to, and the cows never saw their calves; there milk fever cases were of daily occurrence.—Yours, etc.,

L. J. KELLY.

Calcutta.

Sir,

Milk fever syringes are not yet used by all owners, and cases are still remunerative, if properly conducted—not with a bicycle pump and without medicine—to say nothing of the credit one gets from the anxious client. With the kindly help of veterinary correspondents to agricultural papers, preventive veterinary medicine may be carried too far—from the practitioner's point of view; the palmy days promised in the future by "those who know" notwithstanding.—Yours faithfully,

G. F. B.

Veterinary Societies—Addresses.

BORDER COUNTIES V.M.S.
Pres: Mr. J. W. Hewson, M.R.C.V.S., Wigton
Hon. Sec. (pro tem.): Mr. F. W. Garnett, M.R.C.V.S., Dalegarth, Windermere
Meetings, Second Friday of Feb., June, and October

NORTH MIDLAND VETERINARY ASSOCIATION
Pres: Mr. F. L. Somerset, M.R.C.V.S., Chesterfield
Hon. Sec: Mr. J. S. Lloyd, F.R.C.V.S., Sheffield

GLASGOW V.M.S.
Pres. Principal McCall.
Hon. Sec. Mr. J. Gibson, 16 Overdale Gdns, Langside, Glas

ROYAL VETERINARY COLLEGE M.A.
Pres: Dr. Lander, D.Sc.
Hon. Sec: Mr. B. Gorton, M.R.C.V.S. *Assist*. Mr. T. J. Davis

ASSOCIATION OF VETERINARY OFFICERS OF HEALTH
Pres: Mr. J. G. Reynard, M.R.C.V.S., Perth
Hon, Sec. & Treas. Mr. A. M. Trotter, M.R.C.V.S., Moore Street, Abattoir, Glasgow,

NATIONAL ASSOCIATION OF VETERINARY INSPECTORS
Pres: Mr. J. Abson, F.R.C.V.S., Sheffield
Hon. Sec: Mr. Trevor Spencer, M.R.C.V.S., Kettering

NATIONAL VETERINARY BENEVOLENT & MUTUAL DEFENCE SOCIETY.
Pres: Mr. W. A. Taylor, F.R.C.V.S., Brick-st, Manchester
Hon. Sec: Mr. G. H. Locke, M.R.C.V.S. Grosvenor Street, Oxford-st., Manchester
Treas: Mr. J. B. Wolstenholme, F.R.C.V.S., Quay-street, Manchester

VICTORIA VETERINARY BENEVOLENT FUND.
Pres. W. Freeman Barrett, Esq. Fountain Ct, Temple, E.C.
Hon. Sec. & Treas: Mr. W. Shipley, F.R.C.V.S. South Town. Great Yarmouth

COLONIAL SOCIETIES (*continued next page*)

VETERINARY ASSOCIATION OF NEW SOUTH WALES.
Pres: Mr. S. T. D. Symons. M.R.C.V.S., Chief Inspr. of Stock
V. Pres: Prof. T. D. Stewart, M.R.C.V.S., B.V.SC., SYD.
Hon. Sec. & Treas: Mr. Max. Henry, M.R.C.V.S., B.V.SC. (SYD). 56 Bridge Street, Sydney.

NATIONAL VETERINARY ASSOCIATION

Pres. Mr. William Hunting, F.R.C.V.S.
Sec: Mr. William Hunting, F.R.C.V.S. London, S.W.
Treas: Prof. G. H. Wooldridge, F.R.C.V.S.,
Ryl. Vet. Coll., Camden Town N.W.

Northern Branch:

Pres, W. A. Taylor, (F) Brick Street, Manchester
Hon. Sec. A. W. Noël Pillers, (F)
74 Smithdown Lane, Liverpool

LANCASHIRE V.M.A.
Pres: Mr. G. H. Locke, M.R.C.V.S.,
Grosvenor-street, Manchester
Hon. Sec. Mr. J. W. Brittlebank, M.R.C.V.S.,
Town Hall, Manchester
Hon. Treas: Mr. E. H. Stent, M.R.C.V.S., Preston-st, Hulme
Meetings, 1st Thursday in April, June, Sept., & Dec.

LIVERPOOL UNIVERSITY V.M.S.
Pres: Mr. J. P. Heyes, F.R.C.V.S., Wigan
Hon. Sec: A. Walker, M.R.C.V.S., Mill Lane, West Derby
Pathological Sec: Mr. D. C. Matheson, F.R.C.V.S.
Meetings, May, July, October, January.

MIDLAND COUNTIES V.M.A.
Pres: Mr. J. Martin, M.R.C.V.S., Wellington, Salop
Hon. Sec: Mr. H. J. Dawes, F.R.C.V.S.,
Camden House, High-st., West Bromwich
Meetings, Second Tuesday, Wednesday, Thursday, and Friday alternately in Feb., May, Aug. and Nov.

NORTH OF ENGLAND V.M.A.
Pres:
Hon. Sec: T. T. Jack, M.R.C.V.S., 3 Elmwood Ter, Sunderland
Meetings, Third Friday, Feb., May, Aug. and Nov.

NORTH WALES V.M.A.
Pres: Mr. F. Booth, M.R.C.V.S., Colwyn, Denbighshire
Hon. Sec. Mr. L. W. Wynn Lloyd, M.R.C.V.S., Carnarvon
Meetings, First Tuesday, March and September

SOUTH DURHAM AND NORTH YORKSHIRE V.M.A.
Pres: Mr. W. Awde, F.R.C.V.S., Stockton-on-Tees.
Hon. Sec. & Treas: Mr. J. H. Taylor, F.R.C.V.S.
Grange Road, Darlington
Meetings, First Friday, Mar., June, Sept. and Dec.

YORKSHIRE VET. ASSOCIATION
Pres: Mr. J. Abson, F.R.C.V.S., Norfolk Street, Sheffield
Hon. Sec; Mr. J. Clarkson, M.R.C.V.S., Garforth, nr. Leeds
Hon. Treas: Mr. A. McCarmick, M.R.C.V.S.,
Kirkstall-road, Leeds

Southern Branch:

Pres. Sir Stewart Stockman, 4 Whitehall Place, S.W.
Sec. T. C. Toope, 34 High Street, Dover

CENTRAL V.S.
Pres. Mr. J. W. McIntosh, M.R.C.V.S., 14 Templar-street, Myatt's Park, S.E.
Hon. Sec: Mr. H. A. MacCormack, M.R.C.V.S.,
122 St. George's Avenue, Tufnell Park, N.
Meetings, First Thursday in each month, except August and September, 10 Red Lion Square, Holborn, at 7 p.m.

EASTERN COUNTIES V.M.A.
Pres. Mr. F. B. O. Taylor, M.R.C.V.S., Western Longueville,
Hon. Sec. & Treas: Mr. Sidney Smith, Junr., M.R.C.V.S.
37 High Street, Lowestoft
Meetings, Second Tuesday, Feb., July and Sept.

LINCOLNSHIRE AND DISTRICT V.M.S.
Pres. Mr. C. W. Townsend, F.R.C.V.S.,
Long Stanton, Cambridge
Hon. Sec: & Treas: Mr. Tom Hicks, M.R.C.V.S.,
Boston Road, Sleaford
Meetings, Second Thursday Feb., June, and October

ROYAL COUNTIES V.M.A.
Pres: Mr. David Wyllie, M.R.C.V.S., Tudor House, Staines
Hon. Sec. & Treas: Mr. G. P. Male, M.R.C.V.S., Reading
Meetings, Last Friday, Jan., April, July and Nov.

SOUTHERN COUNTIES V.S.
Pres: Mr. G. H. Livesey, M.R.C.V.S., Hove, Sussex
Hon. Sec: Mr. J. Alex. Todd, M.R.C.V.S., Worthing
Hon. Treas: Mr. E. W. Baker, M.R.C.V.S., Wimborne
Meetings, Last Thursday, Mar., June and Sept.

SOUTH EASTERN V.A.
Pres. Mr. James Crowhurst, F.R.C.V.S., Canterbury
Hon. Sec. & Treas. Mr. Theo. C. Toope, M.R.C.V.S.,
34 High Street, Dover
Meeting, Second Wednesday in September, Ashford

WESTERN COUNTIES V.M.A.
Pres: Mr. C. E. Perry, F.R.C.V.S., Staple Hill, Bristol.
Hon. Sec. Mr. W. Ascott, M.R.C.V.S., Bideford
Hon. Treas: Mr. P. G. Bond, M.R.C.V.S., Plymouth
Meetings, Third Thursday, March, July and November

Irish Branch:

Pres. Mr. W. Watson, Municipal Buildings, Dublin
Sec. Mr. P. D. Reavy, Leafield, Bundoran, Co. Donegal

CENTRAL V.A. OF IRELAND.
Pres: Mr. B. P. J. Mahony, M.R.C.V.S., Maryborough
Hon. Sec. Mr. E. C. Winter, F.R.C.V.S., Queen-st., Limerick
Treas: Mr. J. F. Healy, M.R.C.V.S., Midleton

CONNAUGHT V.M.A.
Pres. Mr. D. Hamilton, M.R.C.V.S., Ballina
Hon. Sec. & Treas. Mr. A. J. Moffett, M.R.C.V.S., Galway

VET. MED. ASSN. OF IRELAND.
Pres: Mr. P. J. Howard, M.R.C.V.S., Ennis
Hon. Sec: J. J. O'Connor, M.R.C.V.S., R.V. Coll., Dublin
Hon. Treas: Prof. J. F. Craig, M.A., M.R.C.V.S.,
R.V. Coll., Dublin

NORTH OF IRELAND V.M.A.
Pres: Mr. J. A. Jordan, M.R.C.V.S., Belfast
Hon. Sec: Mr. J. Ewing Johnston, M.R.C.V.S., Belfast
Hon. Treas: Mr. J. A. Thompson, F.R.C.V.S., Lurgan

Scottish Branch:

Pres. Dr. O. Charnock Bradley, } Ryl. (Dick) Vet.
Hon. Sec. Prof. A. Gofton, } Coll: Edinburgh

NORTH OF SCOTLAND V.M.S.
Pres: Mr. W. Marsden, M.R.C.V.S., Banff
Hon. Sec. & Treas: Mr. G. Howie, M.R.C.V.S. Alford, Aberdeen
Meetings, Last Saturday in January and August

ROYAL SCOTTISH V.S.
Pres: Mr. Reid, M.R.C.V.S., Auchtermuchty.

SCOTTISH METROPOLITAN V.M.S.
Pres: Mr. P. Wilson, M.R.C.V.S., Lanark
Hon. Sec: Mr. Jas. Henderson, M.R.C.V.S.,
Public Health Dept., City Chambers, Edinburgh

WEST OF SCOTLAND V.M.A.
Pres: Prof. John R. McCall, M.R.C.V.S., Vety. Coll. Glasgow
Hon. Sec: Mr. J. F. Macintyre, M.R.C.V.S.,
19 Bank Street, Hillhead, Glasgow
Hon. Treas: Mr. Geo. W. Weir, M.R.C.V.S.,
88 Crookston Street, Glasgow
Meetings, Second Wednesday, May, Oct. and January.

COLONIAL SOCIETIES: *(see preceding page)*

BRITISH COLUMBIA V.M.A.
Pres: Dr. Gibbons, M.R.C.V.S., Vancouver,
Hon. Pres: Dr. Hamilton, M.R.C.V.S., Victoria.
Sec., Treas., Registrar. Dr. T. Jagger, V.S., Vancouver.

CAPE OF GOOD HOPE V.M.S.
Pres. Mr. J. D. Borthwick, M.R.C.V.S., Cape Town
Hon. Sec. & Treas. Mr. R. W. Paine, F.R.C.V.S.

CENTRAL CANADA V.A.
Hon. Sec: Mr. A. E, James, Ottawa

VET. ASSN. OF MANITOBA.
Pres: Dr. W. R. Taylor, Portage la Prairie
Hon. Sec. & Treas: Dr. F. Torrance, Winnipeg

NATAL VETERINARY MEDICAL ASSOCIATION.
Pres. Mr. H. Watkins Pitchford, Govt. Bacteriologist, Pietermaritzburg
Hon. Sec. & Treas. Mr. J. B. Collyer,
Vety. Inspector Natal Police, Pietermaritzburg

ONTARIO V.A.
Pres: Mr. J. H. Tennent, V.S., London, Ontario
Sec: & Treas: Mr. C. H. Sweetapple, V.S., Toronto, Ontario

TRANSVAAL V.M.A.
Pres: Mr. C. E. Gray, P.V.S., Box 134, Pretoria.
Hon. Sec: Mr. P. Conacher, G.V.S., Box 877, Johannesburg